ABSTRACT

Ikmalus Sholehah. 24020122420010. Test of the Antidiabetic Effect of Ramuan Herbal Kencing Manis Madura on Diabetes Mellitus Male Wistar Rats.

Diabetes mellitus is a chronic metabolic disease characterized by hyperglycemia due to impaired insulin secretion or action. The use of traditional herbal medicine as an alternative to antidiabetic therapy began to be widely developed, one of which was the Madura Herbal Medicine for Diabetes, empirically used by the Madurese community to control blood sugar levels. The long-standing use of this herbal remedy had not been accompanied by sufficient scientific evidence regarding its effectiveness and mechanism of action. Information on its effects on physiological and biochemical parameters, such as blood glucose levels, pancreatic histological condition, and oxidative stress in the liver, remained very limited. This study aimed to test the antidiabetic effect of the herbal concoction on blood sugar levels, pancreatic diameter, pancreatic histology damage score, and liver malondialdehyde (MDA) levels in male Wistar rats modeling diabetes mellitus. This study used 30 male Wistar rats which were divided into five treatment groups, namely the normal group, control diabetes group, and three diabetes groups given herbal ingredients at a dose of 5 g/KgBB/day, 10 g/KgBB/day, and 15 g/KgBB/day for 10 and 20 days of treatment. Diabetes induction was performed using streptozotocin (STZ) with a single dose of 45 mg/KgBB. Variables observed included blood sugar levels, pancreatic diameter, histology pancreatic damage score and liver MDA levels. The results showed that the administration of Madurese herbal ingredients at a minimum dose of 5 g/KgBB/day for 20 days was significantly able to reduce blood sugar levels, improve pancreatic tissue histology with lower damage scores, and reduce liver MDA levels compared to the control diabetes group ($p<0.05$). Based on the results of the study, it could be concluded that Madurese herbal ingredients at a minimum dose of 5 g/KgBB/day with an exposure time of 20 days were effectively used as a supporting therapy for diabetes mellitus.

Keywords: Diabetes mellitus, Madurese herbal medicine, Blood sugar, Pancreas, MDA.